REMARKS

A total of 22 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed May 15, 2007, wherefore reconsideration is respectfully requested. By way of the foregoing amendments, claims 1, 10 and 22 have been amended in order to more clearly define features of the present invention. More particularly, claims 1 and 10 have been amended to include an explicit definition of the "subset intransitivity constraint", which definition is explicitly supported in the background portion of the originally filed specification. In that respect, paragraph 6 has been amended to more clearly define the nature of subset intransitive constraint. Claim 22 has been amended to correct improper claim dependency.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action,:

- claim 22 stands objected to for improper claim dependency;

- claims 1-9 stand rejected under 35 U.S.C. § 112, second paragraph;

- claims 1, 2 and 10 stand rejected under 35 U.S.C. § 102(e) as being unpatentable over the teaching of United States Patent No. 7,123,620 (Ma);

- claim 11 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of Ma;

- claims 3-9 and 12-16 stand objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent for including all of the limitation of the base claim and any intervening claims; and

- claims 17-22 are allowed.

As an initial matter, Applicant appreciates the Examiner's Allowance of claims 17-22 and indication of allowable subject matter in claims 3-9 and 12-16. The Examiners various claim rejections are believed to be traversed by way of the above-noted claim amendments, and further in view of the following discussion.

Objections to the claims

It is believed that the Examiner's objection to claim 22 is fully addressed by way of the above-noted amendments in the claims.

Rejections under 35 U.S.C. § 112, second paragraph

It is believed that the Examiner's objections to claims 1 and 10 are fully addressed by way of the above-noted amendments in the claims.

Rejections under 35 U.S.C. § 102(e) and 103(a)

United States Patent No. 7,123,620 (Ma) teaches a method of computing explicit routes through an IP network, in which a global route identifier is assigned to each link, and inserted in messaging passed through the network.

However, the person of ordinary skill in the art will recognise that Ma does not teach, suggest, or even remotely contemplate any of the elements of the present invention. In particular, the person of ordinary skill in the art will recognise that in a packet-switched network such as an IP network, intransitive constraints simply do not exist. More particularly, in a packet-switched network packets are forwarded on a hop-by-hop basis, with each router forwarding the packet to a next hop based on the destination address and the content of a forwarding table maintained by the node. By definition, the forwarding table contains information regarding all (and only) those addresses that can be reached from the router, and it is assumed that any packet received by the router can be forwarded to any address identified in the forwarding table. Conversely, if the router cannot forward a received packet to an address, or equivalently, a link, then that address (or link) will not appear in the forwarding table.

As described in the background of the present specification, subset intransitive constraints arise from situations in which two adjacent links have sufficient capacity to support a traffic flow, but the traffic cannot be conveyed through both links in sequence. Thus, for

example, adjacent links **ab** between **A** and **B**, and **bc** between **B** and **C** may have sufficient capacity to carry the traffic flow, but the traffic cannot transit the links **ab** and then **bc** in sequence – because B is unable to pass the traffic between the two links **ab** and **bc**. This situation can arise in cases where wavelength continuity or timeslot continuity across a node are required. The person of ordinary skill in the art will immediately recognise that issues of wavelength and/or timeslot continuity are relevant only at the physical transport layer of the network; they simply do not exist at higher layers of the protocol stack, which are only concerned with packet addressing.

As such, it will be seen that Ma fails to provide methods or systems "for computing paths through a data network that includes a subnetwork which introduces a subset intransitivity constraint on allowable paths through the data network", as required by the claims. The network of Ma is a packet switched network, such as an IP network, in which "subset intransitivity constraints" simply do not exist. It follows that the methods of Ma cannot possibly "construct a directed graph that compensates for the subset intransitivity constraint", because no such subset intransitivity constraint exists in the network. Furthermore, the person of ordinary skill in the art will recognise that the methods of Ma cannot accomplish the claimed operation, even if it were applied to a network that had subset intransitivity constraints.

More particularly, in the system of Ma, each node constructs its forwarding table based on the links through which it can send traffic, and this same information is used to compute the Explicit Routes, and so compile the Explicit Route Table. Thus, for example, router R3 of Ma FIG. 7 computes an explicit route to R8 having the path ID "1000", and so will attempt to route all packets bearing that path ID to router R8, independently of whether those packets are received from R1, R2 or R4. However, consider a situation in which the links R2-R3 and R3-R8 are subject to the intransitivity constraint. In this case, packets received from routes R1 and R4 can be forwarded (by R3) to router R8, as usual; but R3 can not forward packets received from R2 to R8 because of the intransitivity constraint. However, since neither R3's forwarding table nor the explicit route table considers the link through which packets are received, this intransitive constraint will not be detected, and so all packets from R2 (destined for R8) that are received by R3 will be lost. Furthermore, R3 will never inform R2 that R8

cannot be reached through R3, because R3's link discovery algorithms will confirm that R8 can indeed be reached from R3. The method of Ma does not offer any solution to this problem, and certainly does not tech or suggest the solution offered by the presently claimed invention.

In light of the foregoing, it is respectfully submitted that the presently claimed invention is clearly distinguishable over the teaching of the cited reference. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,

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